

**The Coastal Maritime Operations Seminar 2000 and the possible role of NATO in solving the problem of sea-dumped chemical weapons**

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**Abstract** - During the last decade, cross-border environmental problems have been a priority area of cooperation between NATO and the countries of Central and Eastern Europe. Within the framework of the NATO Coastal Maritime Operation programme a seminar was organised in 2000 in Riga (Latvia) on the subject of "Environmental and safety implications of the recovery and disposal of dumped ordnance in coastal waters". The workshop was open to both military staff as well as civilian scientific personnel, and a number of national and international civilian organisations. Its main aim was to determine and recommend structures and procedures for NATO and Partner nations to deal with the problem of sea-dumped warfare. One issue that was especially stressed during the debates was the urgent need of a collaboration between the military and civilian/scientific world. Further topics concerned the need for more research in order to verify the necessity of munition removal, and the possible set-up of an inventory of dump sites. In this, the "Baltic Ordnance Pilot" project may serve as a guideline. Ideally, the military authorities could take on the role of coordinator; different options exist for NATO funding through the NATO Science Division.

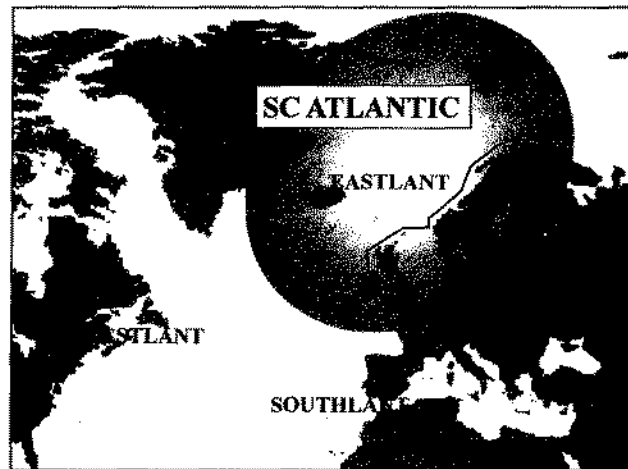
**Background and aim**

The NATO Regional Headquarter East Atlantic (RHQ EASTLANT) at Northwood, UK (Fig. 1), has a busy and active programme of maritime Partnership for Peace (PfP) activities. The HQ contributes to the conceptual work on improving interoperability with partner nations, and it pursues a step-by-step approach to the practical aspects, for example by the organisation of seminars and workshops.

The PfP initiative, introduced by NATO in 1994, is the basis for practical security cooperation between NATO and individual Partner countries. There are now 27 members of PfP (Fig. 2). PfP is expanding and intensifying political and military cooperation throughout Europe, increasing stability, diminishing threats to peace and building confidence. PfP activities include defence planning and budgeting, military exercises and civil emergency operations.

During the last decade, cross-border environmental problems have been a priority area of cooperation between NATO and the countries of Central and Eastern Europe. In 1992 a Pilot Study was proposed within the framework of the North Atlantic Cooperation Council (NACC), entitled "Cross-border environmental problems emanating from defence-related installations and activities". In their report "NATO and Partner Countries study defence-related radioactive and chemical contamination" (NATO 1995, NATO 1996), NATO stated

that the most outstanding example of cross-border contamination is the dumping of large quantities of chemical warfare into the Atlantic, the Baltic Sea, Skagerrak and possibly the Arctic Seas. In 1996 a second phase of the Pilot Study was launched.



*Fig. 1. Sphere of action of NATO RHQ EASTLANT.*



*Fig. 2. Overview of NATO member countries and Partner countries.*

### Coastal Maritime Operations Seminar

The EASTLANT Coastal Maritime Operation Seminar is an annual seminar covering different subjects each year within the overall framework of Coastal Maritime Operations. In 2000 the topic was "Environmental and safety implications of the recovery and disposal of dumped ordnance in coastal waters". The PfP country Latvia hosted the event, through the Latvian Navy, in Riga from 17–19 October 2000. The seminar included specialist briefs, workshop sessions and plenary discussions.

The motivation and underlying idea of the seminar was the present-day situation in the Baltic and NW Europe. In the Baltic Sea, chemical weapons were often deposited at depths of less than 120 meters. Over the years, the warfare has become covered by several meters of sediment. Main aim of the seminar was to identify the different problem areas and to determine and recommend structures and procedures for NATO and Partner nations to deal with the problem of sea-dumped warfare. Also, as East-West cooperation has become more extensive, the need for a military-civilian forum became increasingly evident.

### Workshop Participants

The workshop delegates embraced 26 NATO countries and 13 Partner countries, including both military staff as well as civilian scientific personnel and a number of national and international civilian organisations working on the issue. Civilian scientists were from Belgium (MUMM and University of Gent), The Netherlands (TNO-Prins Maurits Laboratory), Sweden (SIPRI - Stockholm International Peace Research Institute) and NATO (Scientific Division of the NATO HQ Brussels). Military delegates included naval officers from Albany, Belgium, Denmark, Estonia, France, Germany, Italy, Latvia, Lithuania, the Netherlands, Poland, Sweden and the UK.

### Seminar topics

The set-up of the seminar was to present specialist briefings from both scientific and military views. The participation of civil scientists was much appreciated, not only because of their extensive knowledge of the problem but also because this allowed the discussions to go beyond the usual "military approach".

To set the scene Prof. Carvalho-Rodrigues from NATO Scientific Division highlighted the dynamics of different dangers of sea dumped ordnance. He also discussed possible ways of funding for future projects involving sea-dumped CW, which could lead to potential solutions.

Cdr Perfetti (Italian Navy) presented the results of ordnance clearing operations in the Adriatic Sea. During a military operation in the Balkan Allied Force aircrafts were forced to jettison munition into the sea. A total of 235 bombs were dropped. After accidents with local fishermen a first clearing operation was carried out in summer 1999. A second operation was carried out in spring 2000. However the further discovery of ordnance cannot be excluded.

Dr. Jacques (Belgium, MUMM) informed on the possible dangers related to sea-dumped ordnance for the marine environment (both fauna and flora). Some guidelines for

seismic surveys were presented, and different release scenario's (slow leaking, sudden release, acute release) and their impact on the marine life were discussed.

Drs. van Ham (TNO-Prins Maurits Laboratory, the Netherlands) presented the results of ongoing research in The Netherlands on sea-dumped conventional ammunition. Special attention was paid to the degradation process of the shells, the dilution involved and possibilities for recovery operations.

Lt CDR Westman, Legal Advisor of the Swedish Naval Command, highlighted the legal implications when operating in coastal waters of other nations.

Dr Zanders, head of the Chemical and Biological Warfare (CBW) project of SIPRI, gave a situation report on the legal issues related to sea-dumped CW. In specific he discussed the situation in Belgium where WWI munitions were dumped at sea in 1920 and are still found on daily bases in the fields of Flanders.

Lt CDR van der Veen (Royal Dutch Navy) reported on the Operation Allied Harvest in the Adriatic Sea in 1999. He discussed operational aspects and the problems encountered in localisation and clearance of the jettison areas and the safety measures involved.

Capt Besch (German Navy) reported on the mine clearing operations in the eastern Baltic in 1996-2000 ("Baltic Sweep" and "Open Spirit") and the recently set-up Baltic Sea Ordnance Pilot (BOP) project. Main aim of the BOP is the detailed identification of the different dump sites in the entire Baltic in view of potential recovery and removal of the dumped warfare. The project is supported by all Baltic states and is a first comprehensive effort to catalogue such complex matter; it could therefore serve as a good "blueprint" for future work in other areas.

### Discussion

The seminar was divided into three main themes. The first theme involved a more political question - should NATO/PfP get involved in the recovery and clearance of sea-dumped warfare? The next theme was on a more strategic/operational level - what are the required prerequisites to be fulfilled before commencing such an operation? Finally the last theme focused on the operational/tactical approach - what are the possible concepts of how to conduct such an operation? The discussion was split up into three discussion groups. Each group reported on the internal discussion on the different themes in an open session.

As the seminar progressed, it became clear that the background information needed to consider operational details was not available or not sufficient. It became furthermore obvious that there is no scientific consensus concerning the best approach: to remove the dumped munition or leave it be. In many cases munition removal is much doubted. Several scientists point out that the environmental risks related to recovery will be much bigger than if the dump site is left alone; however detailed monitoring of each site is needed to check for the possible release of toxic materials.

Also it is stated that although the major dumping areas are well known, a lot of warfare was not dumped on the intended location and their precise whereabouts is not known. Such being the case, it was not considered relevant to continue with the last theme as planned. Instead it was decided to replace the last theme with three minor themes. Each of the three discussion groups was given a different question: (1) what are the possible reasons for

NATO/PfP to get involved in recovery and clearance operations, (2) what are the possible reasons against NATO/PfP involvement, and (3) what steps need to be taken by NATO in case an operation to clear dumped munition is to take place.

### Seminar conclusions

The following list includes a number of conclusions and recommendations noted during the lively debate that followed the de-briefings of each discussion group:

- The environmental threat seems to be mainly related to chemical weapons rather than conventional weapons; however chemical and conventional warfare may often be mixed.
- More and better information is needed concerning the kind of chemical munition and the exact locations; to this end the work already underway in the BOP project can be used.
- Nations are requested to forward national data to Germany, in order to be included in the BOP, accessible to all.
- The scientists must be tasked to further investigate the severity of the problem with respect to deterioration and corrosion of dumped munition.
- Improvement is needed for the safety measures for divers and underwater equipment (request to the scientists for further investigation).
- Work cannot be done by military or civilian independently, collaboration and cooperation between the two is essential.
- An initiating body is required as well as a coordination authority; the military seems a good option for the first, NATO seems a good option for the second.
- More detailed data and information on dump sites should be freely available.
- Case studies should be conducted by scientists.
- Further development of methods to monitor chemical munition dumps is needed prior to maritime operations.
- In order to proceed nations must be consulted by NATO to estimate their response.
- A first approach to the problem of sea-dumped ordnance should be regional and if successful, expanded.

### Consequences for CINCEASTLANT

The Riga seminar was successful as it both stimulated the civilian and military participants to an exchange of ideas, and also resulted in possible prospects for RHQ EASTLANT to address the issue of dumped munitions at sea. Thanks to the flexibility of the seminar set-up a thorough and meaningful discussion was achieved.

The main outcome of the seminar was that there clearly is a need for more research. This is needed in order to verify if the problem encountered requires removal of the dumped ordnance, or if such a removal in itself might cause a higher risk for the environment than letting it stay in place.

The rather broad scope of the discussion themes caused some problems in finding "suitable limits" for the discussions. Additionally, some of the discussions inevitably

touched on the political aspects related to the subject. This occasionally caused some confusion and disappointment, as the results of these discussions were not so clear and therefore not immediately applicable for practical use.

Another important issue concerned further investigations needed for the exact location of dumped ordnance, since apparently the warfare was not always dumped where it was supposed to be dumped. For the Baltic area, the BOP project discussed above may form a good guideline for this purpose.

In conclusion, the main strategy to follow for SINCEASTLANT is initially to propose further scientific research which can then lead, in a further phase, to a decision involving the possible collaboration of the military in helping to solve the problem of sea-dumped munitions.

### **Future actions**

One issue that was especially stressed during the Riga debates was the urgent need of a collaboration between the military and civilian/scientific world in future projects on the subject of dumped ordnance - ordnance that often found its way to the ocean bottom via military operations. In such a future cooperation, both scientists and military should originate from NATO and PFP Nations bordering the NW European and Baltic seas. Ideally, the military authorities could take on the role of coordinator.

Perhaps the best way to deal with this is a phase-like approach :

- A first task is to set-up an inventory of the dump sites : exact geographical position, type of war material dumped, quantities involved, ... In this, the BOP project may serve as a guideline. Ideally, the results of this study could be published.
- A second, important task concerns risk-analysis and possible standardisation. How dangerous is each site, is there need for recovery ? The outcome of this could be a practical guide.
- A third task involves the analysis of state-of-the-art recovery techniques. Different sites will call for different technical challenges. What are the risks involved, how can these risks be minimised. Again this could result in a practical guide.
- A fourth task concerns the storage and destruction of the recovered munition. What is the dismantling capacity in the different countries; are there possibilities for international collaboration.

These different tasks should not necessarily be carried out successively - they may be carried out simultaneously, or in a different order.

### **Possible funding**

Still, one important question remains : how can this be funded ? It is obvious that most tasks necessitate a collaboration with and input by the military. For instance, task 1 involving dump site inventory will highly depend on information held by military archives. It therefore seems logical to include NATO funding. Possible options for this are :

- NATO Science Division (NSD) (civilian) : the CCMS programme (Committee on the Challenge of Modern Society) opens different perspectives for funding :

- Advanced Research Workshop (ARW)
- Expert Visits (EV)
- Collaborative Linkage Grant (CLG) (cooperation between R&D Centres / Labs)
- NATO Research and Technology Division (RTD) (military) : the HMF Programme (Human Factors in military) offers several funding options.

In addition there is the possibility to combine NSD and RTD funding - i.e. a combined CCMS/HMF project. However it should be kept in mind that NATO funding alone may not be sufficient to support an entire project - it merely involves supplementary funding within an already existing project.

A possible option could therefore be to use NATO funding as a means of preparation for a new project (e.g. through the organisation of a workshop). During this preparatory phase the project outline can be defined and - equally important - a network may be set up. Deadlines for submission of ARW proposals are several times per year. The current director of the NATO Science Division, Dr. Carvalho Rodrigues, highly favours the input of NATO in solving the problem of sea-dumped CW.

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